

REMARKS

In this Amendment claims 1 and 7 have been amended. Claims 1-12 are currently pending in this application.

Claims 1-12 stand objected to for a spelling error in claims 1 and 7. It is believed that the foregoing amendments to claims 1 and 7 overcome this objection.

Claims 1-12 stand rejected under 35 U.S.C. § 103(a) for obviousness from the teachings of a publication of Schenck et al. in view of a publication of Ishibashi and further in view of well-known prior art. Specifically, in the Office Action, the Examiner admits that the Schenck et al. publication does not teach:

1. the use of inner and outer coils;
2. that the resulting field strength falls within a tolerable range of a target magnetic field gradient under shielded conditions;
3. setting a number of inner or outer coils, nor (sic) the number of turns of each coil;
4. the use of Fourier components;
5. the calculation of leaking fields;
6. field distortions caused by eddy currents; and
7. resetting the number of outer coils and number of turns of each outer coil if the magnetic field distortions are outside the tolerable range.

However, the Examiner asserts that the Ishibashi publication teaches features 2-7 listed above. In addition, the Examiner takes official notice that it would have been obvious to one of ordinary skill in the art to modify the teachings of the Schenck et al. publication by using inner and outer coils, feature 1 above. It is respectfully submitted that the combination of the Schenck et al. and Ishibashi publications do not disclose the methods of claims 1 and 7 as amended herein.

Specifically, equations 5 and 6 of the Ishibashi publication disclose calculating magnetic fields caused by non-linear eddy currents by using Fourier transformation along temporal axis. In contrast, claims 1 and 7 have been amended to recite "calculating Fourier components of an electrical current spatial distribution . . .". Support for this amendment to claims 1 and 7 is found in equations 26 and 27 of the applications as originally filed.

Moreover, in the Office Action, the Examiner takes official notice "that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Schenck by using inner and outer coils, (as claimed in feature 1) of the list of features not taught by Schenck), because doing so would enable creating EMF patterns that cannot be created by using only one layer of coils". Reconsideration of this official notice is requested.

The Schenck et al. publication discloses utilizing a boundary element method (BEM) to design a current carrying coil that will produce a given magnetic field. In contrast, the present invention does not utilize BEM. Accordingly, it cannot be said that it would have been obvious to one of ordinary skill in the art to modify the teachings of the Schenck et al. publication to arrive at the invention claimed in claims 1 and 7 absent some teaching or suggestion in the prior art to modify such teachings.

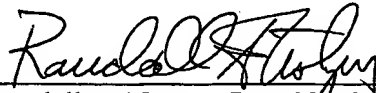
CONCLUSION

Based on the foregoing amendments and remarks, reconsideration of the objection and the rejection, and allowance of claims 1-12 are requested.

Respectfully submitted,

WEBB ZIESENHEIM LOGSDON
ORKIN & HANSON, P.C.

By


Randall A. Notzen, Reg. No. 36,882
Attorney for Applicant
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1818
Telephone: 412-471-8815
Facsimile: 412-471-4094
E-Mail: webblaw@webblaw.com